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SPINAL SYPHILIS, WITH A REPORT OF THREE CASES.*

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Spinal Syphilis has been the subject of far less attention than the cerebral form. This may be accounted for by its much greater rarity, a fact admitted by all. Although a fairly large number of cases are on record, the numerous and exhaustive papers and monographs which have appeared in recent years on the cerebral form do not as yet exist for the spinal. An early recognition of the affection in question is, however, of hardly less importance than the same disease in the brain, as it is only in cases in which treatment is commenced before actual destruction of the nerve elements has taken place that we can hope to completely remove the disease. As the progress of syphilomata sometimes exceedingly rapid, it not unfrequently happens that patients, especially among the lower classes, postpone their visit to a physician until after irrevocable damage has been done.

The effects of syphilis on the spine are numerous and far-reaching. In some way or other this disease predisposes to slowly progressive sclerosing changes in the nerve centres. The best known example of this is locomotor ataxia, in which probably over 60 per cent. of cases owe their origin to syphilis. A considerable number of cases of acute ascending paralysis have been observed in syphilitic subjects, and in some the symptoms have been said to pass off under suitable treatment. So far no explanation has been offered of the relation between these diseases. Myelitis in a subacute or chronic form is another affliction be-

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tween which and syphilis an obscure connection exists, but at present we are only aware of the fact that many cases exist in sufferers from the latter disease. Arterial changes, more especially thickening of the intima and obstruction to the passage of blood, have been found in spinal as well as cerebral syphilis, and it has been suggested that softening may thus occur from defective vascular supply and so simulate myelitis. The facts, however, that softening is rare in cases of non-syphilitic arteritis, and that inflammatory changes undoubtedly occur, rather militate against this view.

In addition to these indirect results of the syphilitic poison, symptoms are undoubtedly due to gummata and their attending inflammation. Although a considerable number of instances of syphilitic paraplegia are recorded, there are as yet but few post-mortem examinations, so that our knowledge of this subject is somewhat fragmentary.

Gummatous formations usually occur in the membranes, and the attending inflammation infiltrates the surrounding structures, causing adhesions of the membranes to each other and to the cord, and not unfrequently destroying and displacing its elements. Heuban also describes gummata of the membranes appearing as minute nodules resembling miliary tubercle. The victims of hereditary syphilis are seldom attacked by disease of the nerve centres, but a few instances are on record in which the spinal meninges have been affected. Siemerling (*Arch. v. Psychiatrie*, 1888) reports a case in which the child of syphilitic parents was attacked by hemiplegia and aphasia at the age of five; two years later optic atrophy consecutive to neuritis came on, and ataxia of the limbs. At the age of 13, death occurred, preceded by vomiting and headache. At the autopsy, in addition to cerebral lesions, the spinal pia mater was covered with gummata, which encroached on and destroyed the fibres of the cord, especially the posterior columns.

From this brief sketch of the anatomical conditions it may be surmised that the symptoms are apt to be extremely variable. There is, indeed, nothing characteristic in the symptoms, and, as Gowers well puts it, "there is no combination of symptoms

produced by syphilis that are not also produced by other disease." In the diagnosis, a history or evidence of syphilis must be carefully looked for, and even if absent, it is necessary to remember Broadbent's caution that the nervous system is frequently attacked by syphilis in those in whom evidence of the disease is lacking. In any case in which there is any reason to suspect syphilis, it is an imperative duty to use anti-syphilitic remedies without delay; and even if the disease is not specific, the use of mercury and of iodide of potassium can do no harm.

The prognosis is not always favorable even in cases of gummata, whilst myelitis and tabes are not affected by antisyphilitic remedies. It must be remembered that gummata are apt to rapidly cause destruction of the nerve tissue, and in such cases permanent damage will result. Then, again, there seems to be cases in which specific remedies lose their effect.

In treatment, the cases which have come under my observation have invariably had mercurial inunctions, with iodide of potassium internally in doses of from ten to thirty grains or more three times daily. Although mercury may not always be necessary, it seems by far the best practice to administer it, as it is admitted that the iodide alone may fail. Dr. Gowers recommends the iodide to be given for not longer than six to ten weeks, stating that it can do all it is capable of in that time, and that a longer continuance may be harmful or render the subject insusceptible to its influence.

Three cases which have come under my observation may be quoted to illustrate some of the phases of syphilitic spinal disease.

CASE I.—Mrs. M., aged 32, came to the Montreal Dispensary in June, 1888, complaining of headache, double vision, and weakness. The woman had been married for eight years to a dissolute husband, and had had two children and one miscarriage. Three years previously she had a cutaneous eruption, and last summer sores on the face and leg.

Examination.—The patient is anæmic and thin. There are pigmented scars on the knees and toward the lower end of the left leg, which were looked upon as undoubtedly syphilitic.

There were also five or six round and non-pigmented scars on the face. She was ordered ten grains of iodide of potassium, and returned in a month with symptoms relieved, and was then ordered to take a mixture of bichloride of mercury and iodide for some months. This, however, she failed to do.

This woman was next seen in January, 1889, when she returned with a marked ataxic gait. On enquiry, she stated that two months previously she noticed a sensation of pins and needles with weakness in the legs, also a girdle sensation round the waist and pains in front of knees, but nothing corresponding to the lightning pains of locomotor ataxia. The gait was markedly ataxic, the lower limbs being raised high from the ground and brought down violently on the heels, and she was unable to stand with the eyes closed. There was notable paresis of the lower extremities and increased knee-jerk, but no ankle clonus. Numerous patches of anæsthesia were present on the trunk, as high as the third or fourth rib, into which pins could be run without evoking any response. Touch and the sensation of heat and cold were here also lost. At the level of the girdle sensation there was a complete band of anæsthesia. Sensation in the legs was normal. The urine occasionally was passed involuntarily. The patient continued to attend for two other weeks, but as there was no improvement with specific treatment, and as it was ascertained that she was not taking her remedies regularly, she was sent into hospital. Under the influence of mercurial inunctions and iodide of potassium the ataxia rapidly disappeared, strength returned to the legs, and sensation became normal, with the exception of a girdle sensation round the waist. She left the hospital May 7, and was afterwards able to follow her employment as a washerwoman.

In this case the evidence of syphilis is placed beyond a doubt by the scars, cachectic appearance, and the rapid action of anti-syphilitic remedies. The girdle sensation and anæsthetic zone point to a lesion, probably a gumma, in the lower dorsal region. It is known that ataxia may result from disease in the course of the sensory afferent nerves, as in some cases of peripheral neuritis, or from disease of the posterior columns of the cord. Judg-

ing from the absence of severe pains in the course of the nerves, it is reasonable to suppose that the posterior columns of the cord were themselves involved, and the occasional involuntary passage of urine is also in favor of this view. The increased knee-jerks and paresis denote interference in the motor tract above the lumbar region, and both these symptoms serve to distinguish the case from one of locomotor ataxia.

CASE II.—A. A., an Italian, aged 23, a moulder by trade, was first seen July 11th, 1890, and then complained of general weakness, especially in the back and legs, and of severe pains in the knees and elbows. These symptoms had only been noticed for two weeks, and only became well marked a week previously. Three years previously the man had a sore on the penis, the scar of which still remains, and this was followed by sore throat and alopecia. A medical man whom he consulted in Italy told him that he could not marry for three years, so that his disease was evidently syphilitic.

Examination.—Patient is well-nourished. He complains of severe pains in the small of the back, the knees, and elbows, and there is a girdle sensation about the level of the umbilicus. These pains are somewhat increased at night. Marked paresis of all four limbs, especially the lower, and involving all the groups of muscles. The gait is normal; there is no ataxia. The knee-jerks are increased, but there is no ankle clonus. The superficial reflexes are absent, except the cremaster and the left abdominal, which are diminished. There is slight tenderness on percussion of the lumbar spines, but no rigidity of the spinal muscles. Anæsthesia to touch, and pain on the greater part of the trunk below the umbilicus and over the greater part of the thighs. Sensation in the legs is diminished, but the patient cannot bear a pin prick, as he does above. He was ordered mercurial inunctions, and used about a drachm daily; in ten days the pains had almost completely left. On Aug. 16th the arms were stronger, but the legs remain weak. Sensation in thighs and trunk has returned, and there are small areas of hyperæsthesia, also a zone of anæsthesia around the umbilicus.

The superficial reflexes have returned. Was ordered iodide of potassium from the first, but has been taking it very irregularly in doses of from ten to thirty grains three times daily.

The rapid onset of the symptoms are in favor of an inflammatory process, and occurring in a syphilitic subject, there is every reason to believe that they bear the relation of cause and effect. From the symptoms attacking both arms and legs, a considerable area of the cord must be involved, and, according to Gowers, myelitis is more likely to be present than pachymeningitis when both upper and lower extremities are affected. This point is not without value in the prognosis, as myelitis occurring in syphilitic subjects is not materially influenced by antisyphilitic remedies, and in this case it is noteworthy that there has been no material improvement in the strength of the legs. It is possible that there was also a development of specific inflammatory material which was removed by mercury, and so accounting for the disappearance of anæsthesia and of pain under treatment.

I am indebted to Dr. R. L. MacDonnell for permission to use the notes of the following case :—

CASE III. *Syphilis, Myelitis, Hemiplegia*.—A book-keeper, aged 34, was admitted to the Montreal General Hospital, Feb. 4th, 1890, for pain in the head and dizziness. One year ago he contracted a single chancre, which was followed three months later by a rash and sore throat. Although subject to headaches for three years, these have become worse since acquiring syphilis, and have been so severe as to prevent him working for five months. There is no nocturnal exacerbation. During the past four months there has been difficulty of micturition, and an occasional resort to the catheter has been required. Weakness of the legs has also been coming on for some months, with a girdle sensation round the waist. He has had no antisyphilitic treatment up to admission.

Present condition.—Patient is fairly nourished and intelligent. Several small ulcers on the face and in the throat. There is paresis and spasm of both legs, with increased activity of the knee-jerk and of the plantar reflex, also slight ankle clonus.

The gait is shuffling, the feet being dragged along, scraping the ball of the toes on the floor. Sensation is normal. Micturition frequent, five or six times by day and three or four by night. The pupils react to light and accommodation, and there is no change in the fundus. The thoracic organs and urine are normal.

In April, weakness of the arms, especially the left, with absence of the cremaster and abdominal reflexes.

In July, when washing, he fell down, but without losing consciousness, and was found to have lost power in the right limbs. There was also right-sided ptosis and facial paralysis.

Antisyphilitic remedies, both inunction of mercury and iodide, have been administered since his admission. Power in the limbs has been gradually increasing, and he is now able to walk fairly, but there is still ankle clonus and increased knee-jerks. Loss of power in the legs and, later on, in the arms, the urinary disturbance, and girdle sensation, coming on gradually, point to the existence of a chronic myelitis. There is no marked pain or spasm in the back or along the spinal nerves, as is usual in meningitis, and the absence of any disturbance of sensation also excludes the latter disease. The effects of treatment have not been very marked, and it is probable that any improvement which has taken place may be attributed to prolonged rest. The attack of hemiplegia, preceded by head-pain and unaccompanied by loss of consciousness, is the recognized character of thrombosis, due to syphilitic arteritis, and it may be remarked that this came on when the patient was under active treatment by mercurials and iodide. One of the most noteworthy points of the case is the early date at which nervous symptoms came on. It is not usual to find either myelitis or hemiplegia until after a lapse of several years, whilst here spinal symptoms supervened not more than eight months after the chancre, and hemiplegia in about sixteen months.